### Bloomenergy<sup>®</sup>

Attn: Robert Stein, Chairman Connecticut Siting Council 10 Franklin Square New Britain, CT 06051

RE: Petition of Bloom Energy Corporation, as agent for Frontier Communications Corporation, for a Declaratory Ruling for the Location and Construction of a 400kW Fuel Cell Customer Side Distributed Resource at 2 Washington Street, Norwalk, CT 06854

Dear Chairman Stein:

We are submitting an original and fifteen (15) copies of the above-captioned Petition, together with the filing fee of \$625.

In the Petition, Bloom Energy Corporation ("Bloom"), as agent for Frontier Communications Corporation ("Frontier"), request the Connecticut Siting Council approve the location and construction of a 400 kilowatt fuel cell and associated equipment (the "Facility"). The Facility will be located on the site of the Frontier building at 2 Washington Street, Norwalk, CT (the "Site"). Electricity generated by the Facility will be consumed primarily at the Site, and any excess electricity will be exported to the electric grid. The Facility will be fueled by natural gas.

Should you have any questions, concerns, or require additional information, please contact me at (860) 839-8373.

Sincerely, Bloom Energy

Justin Adams
justin.adams@bloomenergy.com
(860) 839-8373

### Bloomenergy<sup>a</sup>

## STATE OF CONNECTICUT CONNECTICUT SITING COUNCIL

PETITION OF BLOOM ENERGY : PETITION NO.

CORPORATION AS AGENT FOR FRONTIER

COMMUNICATIONS CORP FOR A : DECLARATORY RULING FOR THE :

LOCATION AND CONSTRUCTION OF A 400- :

KILOWATT FUEL CELL CUSTOMER-SIDE : October 17, 2016

DISTRIBUTED RESOURCE AT 2 WASHINGTON STREET, NORWALK, CONNECTICUT

### PETITION OF BLOOM ENERGY CORPORTATION AS AGENT FOR IKEA FOR A DECLARATORY RULING

Pursuant to Conn. Gen. Stat. §§ 4-176 and 16-50k(a) and Conn. Agencies Regs. § 16-50j-38 et seq., Bloom Energy Corporation ("Bloom"), as agent for Frontier Communications Corp. ("Frontier"), requests that the Connecticut Siting Council ("Council") approve by declaratory ruling the location and construction of a customer-side distributed resources project comprised of two (2) new ES-5 Bloom Energy Servers solid oxide fuel cells and associated equipment (the "Facility"), providing 400-kilowatts ("kW") (net) of power to the Frontier building located at 2 Washington Street, Norwalk, CT Connecticut (the "Site"). *See* Exhibit 1. The Facility will be installed, maintained and operated by Bloom and owned Key Equipment Finance, a third party financing source of Bloom under an agreement with Frontier.

Conn. Gen. Stat. § 16-50k(a) provides that:

Notwithstanding the provisions of this chapter or title 16a, the council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling . . . (B) the construction or location of any fuel cell, unless the council finds a substantial adverse environmental effect or of any customer-side distributed resources project or facility . . . with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Energy and Environmental Projection."

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The proposed Facility will be a customer-side distributed resource facility under 65 megawatts ("MW") that complies with the air and water quality standards of the Department of Energy and Environmental Projection ("DEEP"). Bloom submits that no Certificate is required because the proposed modifications would not have a substantial adverse environmental effect in the immediate vicinity of the Facility as well as in the State of Connecticut.

#### I. COMMUNICATIONS

Correspondence and other communication regarding this petition should be directed to the following parties:

Justin Adams Alicia Surowiec

Bloom Energy Corporation Bloom Energy Corporation

 1299 Orleans Drive
 1299 Orleans Drive

 Sunnyvale, CA 94089
 Sunnyvale, CA 94089

 Telephone: (860) 839-8373
 Telephone: (484) 888-3621

Fax: (408) 543-1501 Fax: (408) 543-1501

Email: justin.adams@bloomenergy.com Email: alicia.surowiec@bloomenergy.com

#### II. DISCUSSION

#### A. Project Description and Purpose

The Facility will be 400kW customer-side distributed resources consisting of two state-of-the-art Bloom Energy Servers and associated equipment. The Facility will be interconnected to the existing switchgear located inside the electrical room of the Frontier building (the "Building"). *See* Exhibit 2.

The proposed Facility is a "customer-side distributed resources" project because it will be "a unit with a rating of not more than sixty-five megawatts [and is located] on the premises of an industrial end user within the transmission and distribution system including, but not limited to,

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fuel cells . . . ." Conn. Gen. Stat. § 16-1(a)(40)(A). Further, in its Final Decision in Docket No. 12-02-09, dated September 12, 2012, the Connecticut Public Utilities Regulatory Authority ("PURA") determined that Bloom's Energy Server qualifies as a Class I renewable energy source fuel cell as defined in Conn. Gen. Stat. §16-1(a)(26)(A). *See* Exhibit 3.

The purpose of the proposed Project is to replace the average baseload of the Building with a Class I renewable energy source, achieve corporate sustainability goals, and improve reliability of electrical systems and equipment. Electricity generated by the Facility will be consumed primarily at the Site, and any excess electricity will be exported to the grid.

### **B.** The Facility

The Facility will consist of two Bloom solid oxide fuel cell Energy Servers and associated equipment. The dimensions of the Facility are approximately 70 feet long, 4 feet wide and 7 feet high. The Energy Server module is enclosed, factory-assembled and tested prior to installation on the Site. *See* Exhibit 6.

The Facility will be capable of producing 400 kW of continuous, reliable electric power. The Facility will interconnect to the Site's distribution system and operate in parallel with the grid to provide the Site's electrical requirements. Any electricity generated in excess of the Site's requirement will be exported to the grid under South Norwalk Electric & Water's ("SNEW") net metering tariff. This site will not have an uninterruptible power module ("UPM") and thus will not have any means to output power in a grid independent capacity at any time. The interconnection to SNEW will be provided from the existing switchgear located inside the electrical room. The SNEW interconnection application for the Facility was submitted and under

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review at the time this petition was filed. The Energy Server will be fueled by natural gas supplied by Eversource.

The Facility, and more specifically the inverters within, are UL1741/IEEE1547 compliant and thus will not operate without a stable utility voltage available. In the event of an outage the Facility will not automatically shut down, they will enter a state of stand-by awaiting the return of a stable utility voltage. When in a state of complete shut down the Energy Server require a combination of remote and on-site coordination to start up the systems. This work is performed by Bloom employed, trained and certified personnel only, Frontier does not control the operation of the system directly. In accordance with Public Act 11-101<sup>1</sup>, the Emergency Response Plan provided to Frontier and its employees is shown in Exhibit 7.

The Facility will have extensive hardware, software and operator safety control systems, designed into the system in accordance with ANSI/CSA America FC 1-2004, the American National Standards Institute and Canadian Standards Association standard for Stationary Fuel Cell Power Systems. The Energy Servers are remotely monitored by Bloom 24 hours a day, seven days a week. If software or hardware safety circuits detect an unsafe condition, variation in temperature or gas pressure outside of operational parameters, fuel supply is automatically stopped and the system is shut down. Two manual fuel shut-off valves are provided at each installation site, and two normally closed, safety shut-off rated isolation valves are installed within the system. In accordance with Public Act 11-101<sup>2</sup>, the fuel lines (pipe) cleaning procedure are to purge for 60 seconds with 10 blasts of on off prior to connecting to the Facility.

<sup>1</sup> An Act Adopting Certain Safety Recommendations of the Thomas Commission

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<sup>&</sup>lt;sup>2</sup> Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission,

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The Facility will be installed in compliance with all applicable building, plumbing, electrical, and fire codes.

Bloom Energy Servers are installed in accordance with NFPA 853<sup>3</sup>. This standard provides fire prevention and fire protection requirements for safeguarding life and physical property associated with buildings or facilities that employ stationary fuel cell systems of all sizes. The risk of fire related to the operation of the Energy Server is therefore very low. Furthermore, in the Energy Server, natural gas is not burned; it is used in a chemical reaction to generate electricity. The natural gas is digested almost immediately upon entering the unit and is no longer combustible. As stated above, any variation in heat outside of the operational parameters will trigger an automatic shutdown of the energy server.

### C. Existing Environment

### i. The Site

The Facility would be installed entirely within the Frontier property located at 2 Washington Street, Norwalk, Connecticut. Specifically, the Facility will be constructed on the 1.7-acre property ("the Site") that surrounds the Building. The Site is zoned as "South Norwalk Business District" ("SNBD") under the zoning regulations of the City of Norwalk (the "City"). The majority of the surrounding areas are zoned under SNBD, Washington Street Design ("WSDD"), and Residential ("D-Residence").

The Facility would be located on a concrete pad within an existing paved area and at the rear of the Building. No parking spaces would be eliminated at the proposed location. The

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<sup>&</sup>lt;sup>3</sup> Standard for the Installation of Stationary Fuel Cell Power Systems, 2015 Edition

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location of Facility was strategically placed in proximity to the existing mechanical equipment, at the rear of the Building, and adjacent to an existing retaining wall to reduce visual impacts to the City and the Building abutters. Photos of the proposed location and adjacent areas are provided in Exhibit 4.

#### ii. Wildlife, Habitat and Cultural Resources

A review of the publically available Natural Diversity Database (NDDB) has shown no known occurrences of state-listed species within the proposed Facility location. Furthermore, the proposed Facility will be located on a paved area that was previously developed and disturbed during construction of the Building and contains no wetlands or cultural resources. Therefore, the construction and operation of the Facility will not have a substantial adverse effect on wetlands, state-listed species, and cultural (archaeological and historical) resources.

#### iii. Flood and Coastal Zones

A review of the flood hazard mapping data from Federal Emergency Management Agency's ("FEMA") National Flood Insurance Program ("NFIP") has shown the Facility would not be located within a 100- or 500-year flood zone. The Site was also reviewed for proximity to the Coastal Boundary, which delineates the coastal boundary of Connecticut as defined in the Connecticut Coastal Management Act. As shown in Exhibit 5, the proposed Facility would not be located within the Coastal Boundary.

#### D. Environmental Effects and Mitigation

#### i. Natural Gas Desulfurization Process

The first step in the production of electricity in the Bloom Energy server is desulfurization – the removal of the sulfur compounds, which have been added to the natural gas

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as an odorant by the natural gas supplier. This step occurs in the desulfurization unit – a canister which contains a filter made for this purpose. Sulfur is not "produced" in this process, but is separated from the natural gas in which it was contained. In that process, trace levels of other compounds which are naturally present in the natural gas may also absorb to the filter. Again, these are not "produced" from the process, but are separated from the natural gas in which they were contained. The filter is made up of inert materials.

The desulfurization process takes place entirely within desulfurization canisters. These are made of extruded aluminum or zinc-plated steel that are built to last for the life of the Energy Server and beyond. Because they are built to hold natural gas, their structural integrity is essential. That integrity is assured by around the clock monitoring of the Energy Servers to detect any leak. Were there a leak, the Server (including the desulfurization operation) would shut down automatically. There has never been a leak from one of the desulfurization canisters. The structural integrity and leak prevention continues after the desulfurization canisters are removed from service. At that point, the entry and exit points for the natural gas automatically seal shut. The desulfurization canister remains sealed and is not opened at the site, or anywhere in the State of Connecticut.

Within days that a desulfurization canister is taken out of service, it is picked up by a Bloom contractor and taken to a licensed facility outside the State of Connecticu, where the desulfurization unit is opened and the contents are removed. As described above, the desulfurization unit has complete structural integrity. Its safety as a container for transporting has been certified by the Department of Transportation (DOT). Specifically, the desulfurization containers are certified to the standards set by DOT, the United Nations, IATA, ICAO and IMO

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as meeting Hazardous Materials Distribution and Packaging requirements. This certification assures that the canisters are secure and have the structural integrity to transport the desulfurization materials safely and without risk of a release.

Bloom has been engaged and expect to have further follow up discussion with regulators on the proper management of materials found in all public pipeline natural gas supplied to homes and businesses, which we filter before that fuel is consumed by our product to produce clean, environmentally friendly electric power. Because our technology is relatively new, the 35 year old regulations do not address our situation, but we have been working with the regulators to obtain clarification.

#### ii. Emissions

The construction and operation of the Facility will comply with DEEP's air and water quality standards and will not have a substantial adverse environmental effect.

With respect to water discharges, the Energy Servers are designed to operate without water discharge under normal operating conditions. Additionally, the Facility would use no water during normal operation beyond a 240-gallon injection at start up.

Conn. Agencies Regs. § 22a-174-42, which governs air emissions from new distributed generators, exempts fuel cells from air permitting requirements. Accordingly, no permits, registrations, or applications are required based on the actual emissions from the Facility. See Conn. Agencies Regs. §§ 22a-174-42(b) and (e). Notwithstanding this exemption, as shown below in Table 1, the Facility meets the Connecticut emissions standards for a new distributed generator.

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Table 1: Connecticut Emissions Standards for a New Distributed Generator

Compound	Connecticut Emission Standard (lbs/MW-hr) <sup>4</sup>	Bloom Energy Server (lbs/MW-hr)
Oxides of Nitrogen (NO <sub>x</sub> )	0.15	<0.01
Carbon Monoxide (CO)	1	<0.10
Carbon Dioxide (CO <sub>2</sub> )	1,650	735-832

The Facility will also meet state criteria thresholds and projected emissions for all greenhouse gases defined in Regulations of Connecticut State Agencies Section 22a-174-1(49) as shown in Table 2. By virtue of the non-combustion process the Bloom fuel cells virtually eliminate NOx, SOx, CO, VOCs and particulate matter emissions from the energy production process. Similarly, there are no CH<sub>4</sub>, SF<sub>6</sub>, HFC or PFC emissions. The CH<sub>4</sub> is broken down in the reforming process. Reforming is the type of process where if you have sufficient catalyst, the reaction can go all the way to completion. That is the case for the Bloom Energy Server. The fuel is reformed in the hot box – with a very significant excess catalyst for reaction.

Table 2: Connecticut Thresholds for Greenhouse Gases

Emission Type	Bloom Output	LERC allowance
Nitrous Oxides (NOx)	<0.01 lbs/MWh	0.07 lbs/MWh
Carbon Monoxide (CO)	<0.10 lbs/MWh	0.10 lbs/MWh
Sulfur Oxides (SOx)	Negligible	Not Listed
Volatile Organic Compounds (VOCs)	<0.02 lbs/MWh	0.02 lbs/MWh
Carbon Dioxide (CO2) See note 1	735-832 lbs/MWh	Not Listed

Note 1: Carbon Dioxide is measured at Bloom's stated lifetime efficiency level of 53-60%

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<sup>&</sup>lt;sup>4</sup> Conn. Agencies Regs. § 22a-174-42, Table 42-2.

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#### iii. Sound Levels

Bloom contracted Mei Wu Acoustics (MWA) to predict the sound levels produced by the proposed Facility. In addition, MWA conducted 24-hour sound level measurements at the Site to establish the existing ambient environmental sound levels in order to compare predicted noise levels with existing conditions and demonstrate compliance with the requirements. The report is provided in Exhibit 8.

Due to the adjacency of the Site to a major road, the noise environment at the Site is classified as a "high background noise area" as defined by DEEP. Therefore, noise from the Facility can be shown to be compliant with the code requirements by the demonstrating the sound levels are no more than 5 dBA above the L90 background noise level (*DEEP Sec. 22a-69-3.6.* /*Norwalk Municipal Sec. 18.76*). The quietest L90 measured by MWA was 55.8 dBA L90, measured from 6–7PM. According to MWA's calculations, the transmitted sound levels from the fuel cells will be approximately 47.6 dBA at the nearest property line with the South Norwalk Branch Library, and 35.8 dBA at the nearest point along the residential district boundary. This level is significantly less than the quietest measured background noise level. It should be noted that noise levels produced from the proposed Facility would be compliant with DEEP's requirements before the high background noise area exception is applied. The proposed fuel cell is therefore compliant with noise level requirements.

#### iv. Visual Effects

The overall visual effect would be mitigated by the proposed location at the rear of the Building, adjacent to an existing retaining wall, and in proximity to existing mechanical equipment.

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### **E.** Project Construction and Maintenance

During construction, appropriate erosion and sedimentation (E&S) controls will be installed and areas of disturbance will be promptly stabilized in order to minimize the potential for soil erosion and the flow of sediments off site. Temporary E&S control measures will be maintained and inspected throughout construction to ensure their integrity and effectiveness. The temporary E&S control measures will remain in place until the work is complete and all disturbed areas have been stabilized. Due to the limited disturbance required for the Facility's installation, no construction-related storm water permits will be required. Further, no additional impervious area will be added to the Site and will not affect drainage patterns or stormwater discharge.

Construction-related impacts will be minimal. The Facility will be located within an existing asphalt area behind the Building. The facility will not extend beyond the limits of the existing asphalt area. All utilities will be installed within the asphalt area and along the rear face of the Building. All utility trenches will be restored in-kind.

#### III. COMMUNITY OUTREACH

the Connecticut General Statutes].'

Bloom has provided notice of this petition to all persons and appropriate municipal officials and governmental agencies to whom notice is required to be given pursuant to Conn. Agencies Regs. § 16-50j-40(a).<sup>5</sup> A copy of the notice letter and a service list are provided in Exhibit 9 and the corresponding abutters map is provided in Exhibit 10. Additionally, prior to

<sup>5</sup> Conn. Agencies Regs. § 16-50j-40(a) requires that "[p]rior to submitting a petition for a declaratory ruling to the Council, the petitioner shall, where applicable, provide notice to each person other than the petitioner appearing of record as an owner of property which abuts the proposed primary or alternative sites of the proposed facility, each person appearing of record as an owner of the property or properties on which the primary or alternative proposed facility is to be located, and the appropriate municipal officials and government agencies [listed in Section 16-50*l* of

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filing this petition, representatives from Bloom briefly discussed the proposed Facility with the City of Norwalk Planning Department. An opportunity to comment on the proposed Site Plan has been provided to the Mayor and City Planner to incorporate any design comments they may have. *See* Exhibit 11.

#### IV. BASIS FOR GRANTING OF THE PETITION

Under Conn. Gen. Stat. § 16-50k(a), the Council is required to approve by declaratory ruling the construction or location of a customer-side distributed resources project or facility with a capacity of not more than 65 MW, as long as the facility meets DEEP air and water quality standards. The proposed Facility meets each of these criteria. The Facility is a "customer-side distributed resources" project, as defined in Conn. Gen. Stat. § 16-1(a)(40)(A), because the Facility is "a unit with a rating of not more than sixty-five megawatts [and is located] on the premises of a retail end user within the transmission and distribution system including, but not limited to, fuel cells" and, as demonstrated herein, will meet DEEP air and water quality standards. In addition, as demonstrated above, the construction and operation of the Facility will not have a substantial adverse environmental effect in the State of Connecticut.

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### V. CONCLUSION

For the reasons stated above, Bloom, as agent for Frontier, respectfully requests that the Council approve the location and construction of the Facility by declaratory ruling.

Respectfully submitted,

Bloom Energy Corporation

By:

Justin Adams
Bloom Energy Corporation
1299 Orleans Drive
Sunnyvale, CA 94089

Telephone: (408) 338-7452

Email: justin.adams@bloomenergy.com

#### **EXHIBITS**

Exhibit 1: Site Location Map

Exhibit 2: Site Plan

Exhibit 3: Final Decision, PURA Docket No. 12-02-09, *Petition of Bloom Energy* 

Corporation for a Declaratory Ruling that Its Solid Oxide Fuel Cell Energy Server Will Qualify as a Class I Renewable Energy Source (Sept. 12, 2012)

Exhibit 4: Photos of the proposed location

Exhibit 5: Coastal Boundary of Connecticut as defined in the Connecticut Coastal

Management Act

Exhibit 6: Bloom Energy Server Product Datasheet and General Installation Overview

Exhibit 7: Emergency Response Plan

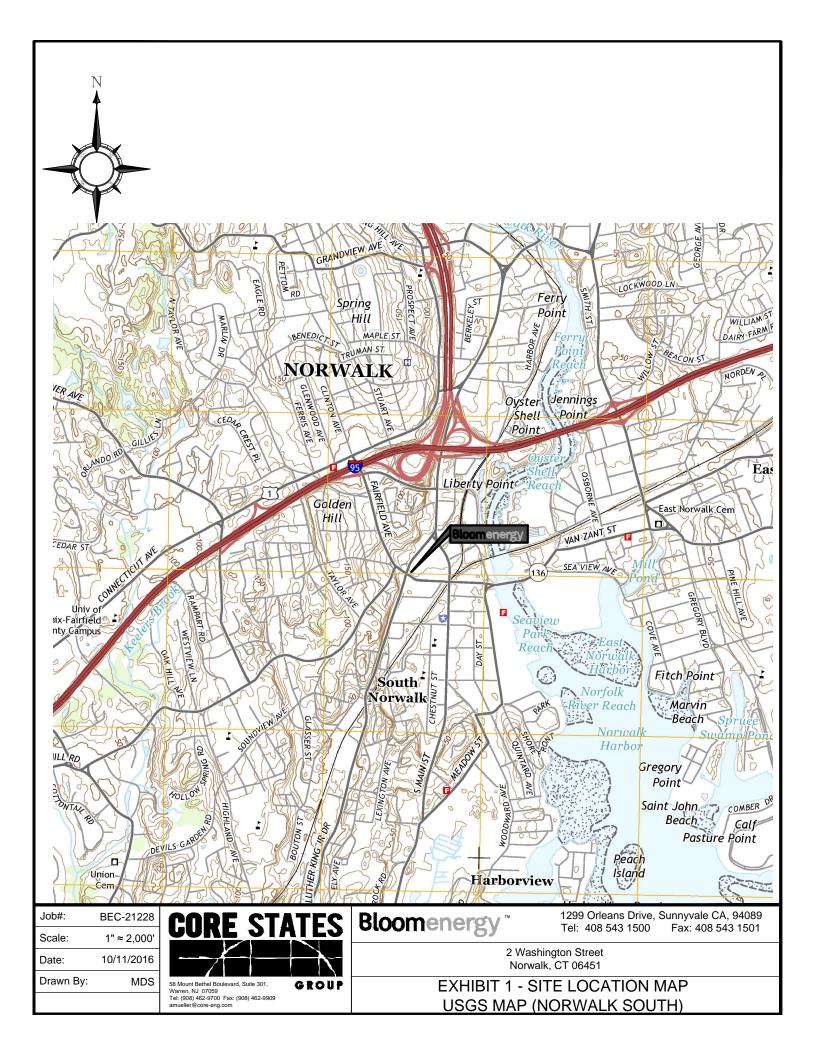
Exhibit 8: Sound Analysis

Exhibit 9: Notice Pursuant to Conn. Agencies Regs. § 16-50j-40(a)

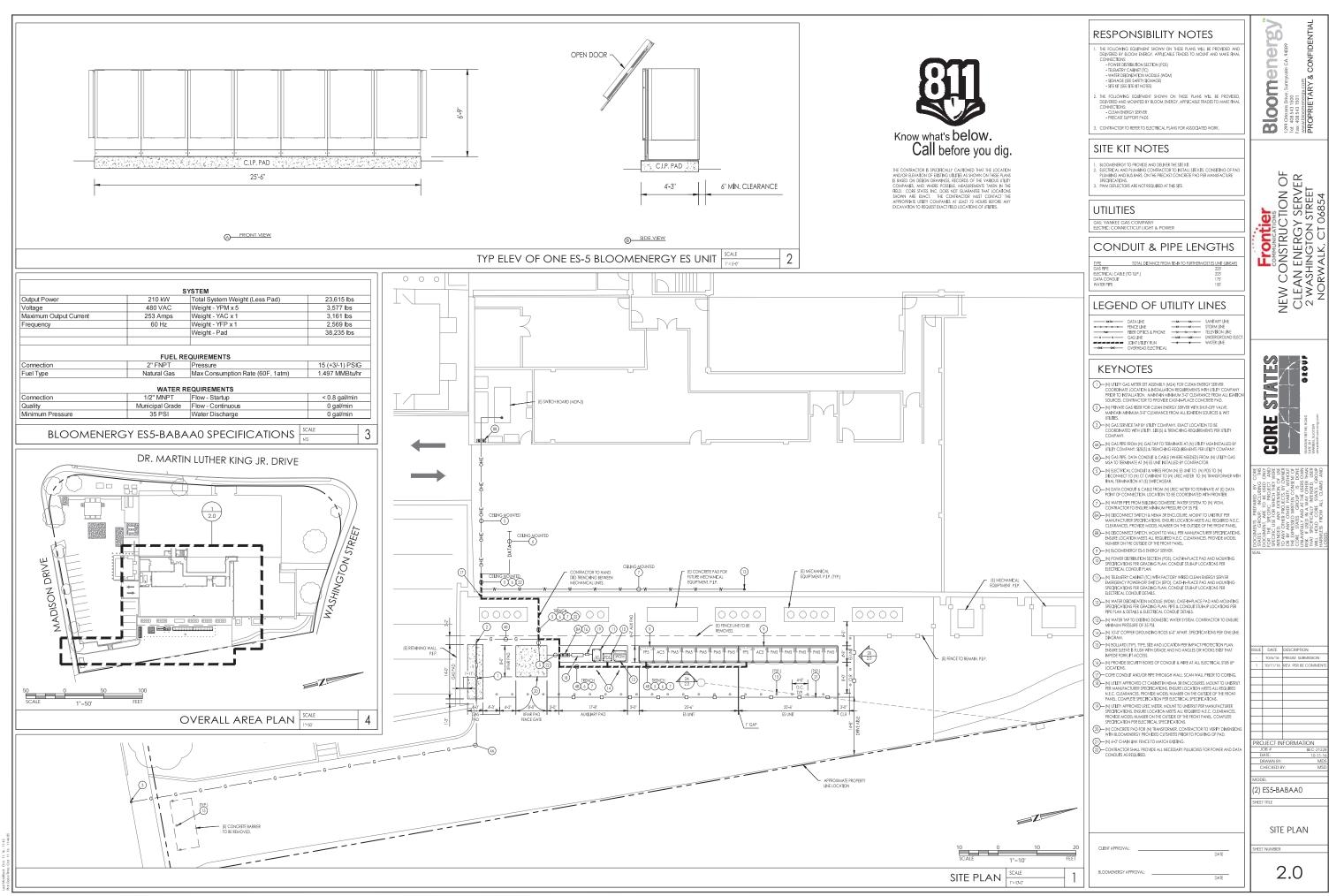
Exhibit 10: Abutters Map

Exhibit 12: Letter to Mayor and City Planner

### Exhibit 1



### Exhibit 2



F.I.N.Bloom Energy/BEC.21228 - Frontier Norwalk, CT\Drawing\REC.21228 - Frontier (Norwalk, CT) - 2.0 Site, CUSA

### Exhibit 3

### STATE OF CONNECTICUT



# DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION PUBLIC UTILITIES REGULATORY AUTHORITY TEN FRANKLIN SQUARE NEW BRITAIN, CT 06051

DOCKET NO. 12-02-09 PETITION OF BLOOM ENERGY CORPORATION FOR A DECLARATORY RULING THAT ITS SOLID OXIDE FUEL CELL ENERGY SERVER WILL QUALIFY AS A CLASS I RENEWABLE ENERGY SOURCE

September 12, 2012

By the following Directors:

Arthur H. House John W. Betkoski, III

### **DECISION**

#### I. INTRODUCTION

By Petition dated February 14, 2012, pursuant to Section 4-176 in the General Statutes of Connecticut (Conn. Gen. Stat.) and Section 16-1-113 in the Regulations of Connecticut State Agencies, Bloom Energy Corporation requests that the Public Utilities Regulatory Authority (Authority) issue a declaratory ruling that its solid oxide fuel cell energy server qualifies as a Class I renewable energy source.

#### II. PETITIONER'S EVIDENCE

Bloom Energy Corporation (Bloom) has commercialized a scalable, modular fuel cell using Bloom's patented solid oxide fuel cell (SOFC) technology. A fuel cell is a device that uses a fuel and oxygen to create electricity by an electrochemical process. A single fuel cell consists of an electrolyte and two catalyst-coated electrodes (an anode cathode). Fuel cells are generally categorized by the type of electrolyte used. Petition, pp. 2 and 3.

Each Bloom Energy Server consists of thousands of Bloom's patented SOFCs. Each fuel cell is a flat, solid ceramic square capable of producing at least 25 watts. In an energy server, Bloom "sandwiches" the SOFCs between metal interconnect plates into a fuel cell "stack." Bloom aggregates multiple fuel cell stacks together into a "power module," and then multiple power modules, along with a common fuel input and electrical output, are assembled as a complete energy server fuel cell. <u>Id.</u>, p. 3.

The Bloom Energy Server converts the chemical energy contained in fuel, such as natural gas, into electricity at an efficiency of approximately 50% - 60% (lower heating value net AC) without any combustion or multi-stage conversion loss. Fuel entering the energy server is processed using a proprietary catalytic method to yield a reformate gas stream, and the gaseous product and preheated air are introduced into the fuel cell stacks. Within the stacks, ambient oxygen reacts with the fuel to produce direct current (DC) electricity. The DC power produced by the energy server system is converted into 480-volt AC power using an inverter, and delivered to the host facility's electrical distribution system. <u>Id</u>.

SOFCs operate at very high temperatures, obviating the need for expensive metal catalysts. With low cost ceramic materials, and extremely high electrical efficiencies, SOFCs can deliver attractive economies without relying on combined heat and power. <u>Id</u>.

Bloom Energy Servers are a fraction of the size of a traditional base load power source, with each server occupying a space similar to that of a parking space. This small, low-impact, modular form of base load power does not pose the environmental challenges associated with a traditional base load power plant, significantly reducing environmental impacts. Moreover, Bloom's innovative design requires only an initial input of 120 gallons of water per 100 kW, after which no additional water is consumed during normal operation. <u>Id.</u>, pp. 3 and 4.

Bloom Energy Servers deliver significant environmental benefits over conventional base load technologies. In addition to significant CO<sub>2</sub> reductions due to its high efficiency, the energy server emits virtually no NO<sub>x</sub>, SO<sub>x</sub>, or other smog forming particulates since the conversion of gas to electricity in a Bloom Energy Server is done through an electrochemical reaction rather than combustion. Id., p. 4.

#### III. AUTHORITY ANALYSIS

Conn. Gen. Stat. §16-1(a)(26) defines a Class I renewable energy source as:

Page 3

(A) energy derived from solar power; wind power; a fuel cell; methane gas from landfills; ocean thermal power; wave or tidal power; low emission advanced renewable energy conversion technologies; a run-of-the-river hydropower facility provided such facility has a generating capacity of not more than five megawatts, does not cause an appreciable change in the river flow, and began operation after the effective date of this section; or a biomass facility, including, but not limited to, a biomass gasification plant that utilizes land clearing debris, tree stumps or other biomass that regenerates or the use of which will not result in a depletion of resources, provided such biomass is cultivated and harvested in a sustainable manner and the average emission rate for such facility is equal to or less than .075 pounds of nitrogen oxides per million BTU of heat input for the previous calendar quarter, except that energy derived from a biomass facility with a capacity of less than five hundred kilowatts that began construction before July 1, 2003, may be considered a Class I renewable energy source, provided such biomass is cultivated and harvested in a sustainable manner; or (B) any electrical generation, including distributed generation, generated from a Class I renewable energy source.

Based on Bloom's assertions, the Authority finds that its Bloom Energy Server qualifies as a Class I renewable energy source "fuel cell" as defined in Conn. Gen. Stat. §16-1(a)(26)(A).

The Authority has created an electronic application process for generation owners to apply for a Connecticut Renewable Portfolio Standards registration. The application is available on the Authority's website at the web address <a href="http://www.ct.gov/pura">http://www.ct.gov/pura</a>. The application should be submitted electronically along with a single hard-copy filing. While the Authority concludes in this Decision that the Bloom Energy Server would qualify as a Class I renewable energy source pursuant to Conn. Gen. Stat. §16-1(a)(26), Bloom must still apply for registration of the aforementioned system once the facility becomes operational and is registered in the New England Generation Information System.

#### IV. CONCLUSION

Based upon the project as described herein, the Authority finds that, as proposed, the Bloom Energy Server would qualify as a Class I renewable energy source. However, since the energy server is not yet operational, it should apply for Class I registration once it begins operations.

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to requirements of the Americans with Disabilities Act. Any person with a disability who may need information in an alternative format may contact the agency's ADA Coordinator at 860-424-3194, or at deep.hrmed@ct.gov. Any person with limited proficiency in English, who may need information in another language, may contact the agency's Title VI Coordinator at 860-424-3035, or at deep.aaoffice@ct.gov. Any person with a hearing impairment may call the State of Connecticut relay number – 711. Discrimination complaints may be filed with DEEP's Title VI Coordinator. Requests for accommodations must be made at least two weeks prior to any agency hearing, program or event.

### **DOCKET NO. 12-02-09**

# PETITION OF BLOOM ENERGY CORPORATION FOR A DECLARATORY RULING THAT ITS SOLID OXIDE FUEL CELL ENERGY SERVER WILL QUALIFY AS A CLASS I RENEWABLE ENERGY SOURCE

This Decision is adopted by the following Directors:

Arthur H. House

John W. Betkoski, III

#### CERTIFICATE OF SERVICE

The foregoing is a true and correct copy of the Decision issued by the Public Utilities Regulatory Authority, State of Connecticut, and was forwarded by Certified Mail to all parties of record in this proceeding on the date indicated.

K. Santopietro

September 12, 2012

Date

Kimberley J. Santopietro
Executive Secretary
Department of Energy and Environmental Protection
Public Utilities Regulatory Authority

60906902 V1-WORKSITEUS-029819/0002

### Exhibit 4



Front of Proposed Facility Location



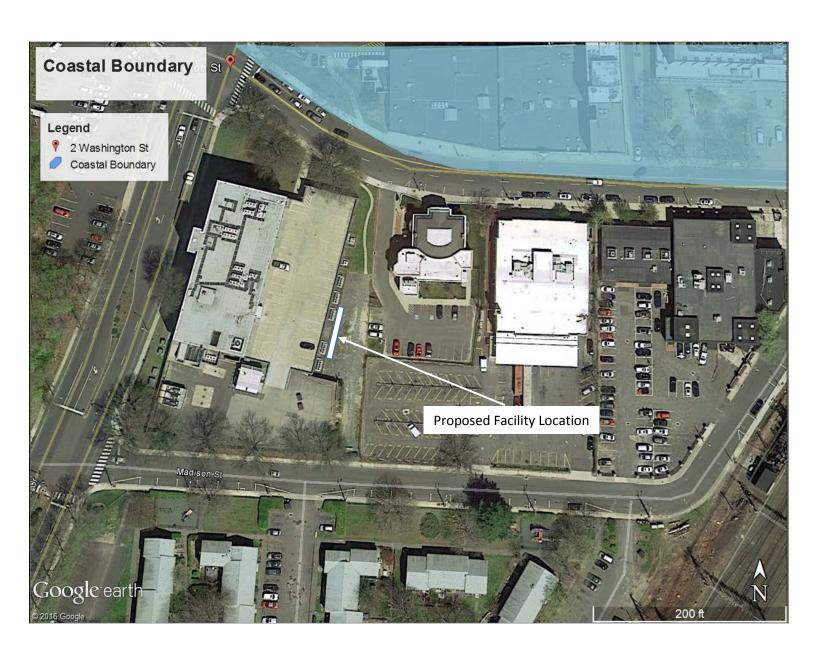
Back of Proposed Facility Location



Retaining Wall near Proposed Facility Location

### Exhibit 5

### Coastal Boundary of Connecticut as defined in the Connecticut Coastal Management Act



### Exhibit 6

### **Energy Server 5**

Clean, Reliable, Affordable Energy



#### **CLEAN, RELIABLE POWER ON DEMAND**

The Energy Server 5 delivers clean power that reduces emissions and energy costs. The modular architecture enables the installation to be tailored to the actual electricity demand, with a flexibility to add servers as the load increases. The Energy Server 5 actively communicates with Bloom Energy's network operations centers so system performance can be monitored 24 hours per day, 365 days per year.

#### **INNOVATIVE TECHNOLOGY**

Utilizing solid oxide fuel cell (SOFC) technology first developed for NASA's Mars program, the Energy Server 5 produces clean power at unprecedented efficiencies, meaning it consumes less fuel and produces less  ${\rm CO_2}$  than competing technologies. Additionally, no water is needed under normal operating conditions.

#### **ALL-ELECTRIC POWER**

The Energy Server 5, which operates at a very high electrical efficiency, eliminates the need for complicated and costly CHP systems. Combining the standard electrical and fuel connections along with a small footprint and sleek design, the Energy Server 5 is the most deployable fuel cell solution on the market.

#### CONTROLLED AND PREDICTABLE COST

By providing efficient on-site power generation, the economic and environmental benefits are central to the Energy Server 5 value proposition. Bloom Energy customers can lock in their long term energy costs and mitigate the risk of electricity rate increases. The Energy Server 5 has been designed in compliance with a variety of safety standards and is backed by a comprehensive warranty.

#### **About Bloom Energy**

Bloom Energy is making clean, reliable energy affordable. Our unique on-site power generation systems utilize an innovative fuel cell technology with roots in NASA's Mars program. By leveraging breakthrough advances in materials science, Bloom Energy systems are among the most efficient energy generators, providing for significantly reduced operating costs and dramatically lower greenhouse gas emissions. Bloom Energy Servers are currently producing power for many Fortune 500 companies including Apple, Google, NSA, Walmart, AT&T, eBay, Staples, as well as notable non-profit organizations such as Caltech and Kaiser Permanente.

#### **Headquarters:**

Sunnyvale, California

#### For More Information:

www.bloomenergy.com

### **Energy Server 5**

Outputs	
Nameplate power output (net AC)	262.5 kW
Base load output (net AC)	250 kW
Electrical connection	480 V, 3-phase, 60 Hz
Inputs	
Fuels	Natural gas, directed biogas
Input fuel pressure	10-18 psig (15 psig nominal)
Water	None during normal operation
Efficiency	
Cumulative electrical efficiency (LHV net AC)*	65-53%
Heat rate (HHV)	5,811-7,127 Btu/kWh
Emissions	
NOx	< 0.01 lbs/MWh
SOx	Negligible
00	<0.05 lbs/MWh
VOCs	< 0.02 lbs/MWh
CO <sub>2</sub> @ stated efficiency	679-833 lbs/MWh on natural gas;
	carbon neutral on directed biogas
Physical Attributes and Environment	
Weight	14.3 tons
Dimensions (variable layouts)	14'9" x 8'9" x 7' or 29'6" x 4'5" x 7'5"
Temperature range	-20° to 45° C
Humidity	0% - 100%
Seismic vibration	IBC site class D
Location	Outdoor
Noise	< 70 dBA @ 6 feet
Codes and Standards	
Complies with Rule 21 interconnection and IEEE154	7 standards
Exempt from CA Air District permitting; meets stringe	
Product Listed by Underwriters Laboratories Inc. (UL	) to ANSI/CSA FC 1-2014
Additional Notes	
Access to a secure website to monitor system perfor	mance & environmental benefits

 $<sup>\</sup>star$  65% LHV efficiency verified by ASME PTC 50 Fuel Cell Power Systems Performance Test

### **Bloomenergy**°

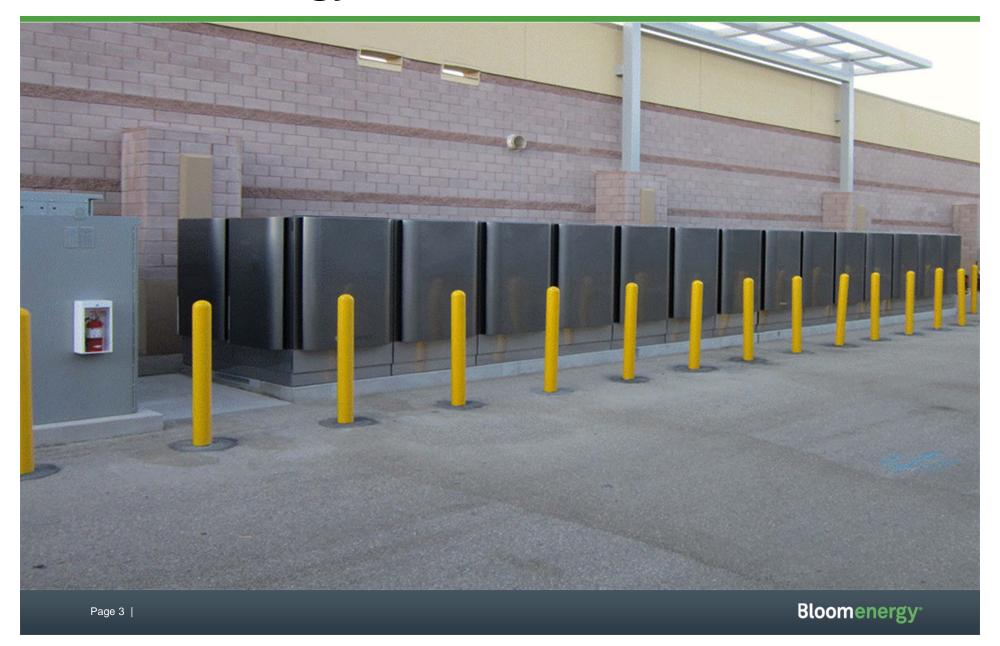
Bloom Energy Corporation 1299 Orleans Drive Sunnyvale CA 94089 T 408 543 1500 www.bloomenergy.com

# **Bloom Energy Server**

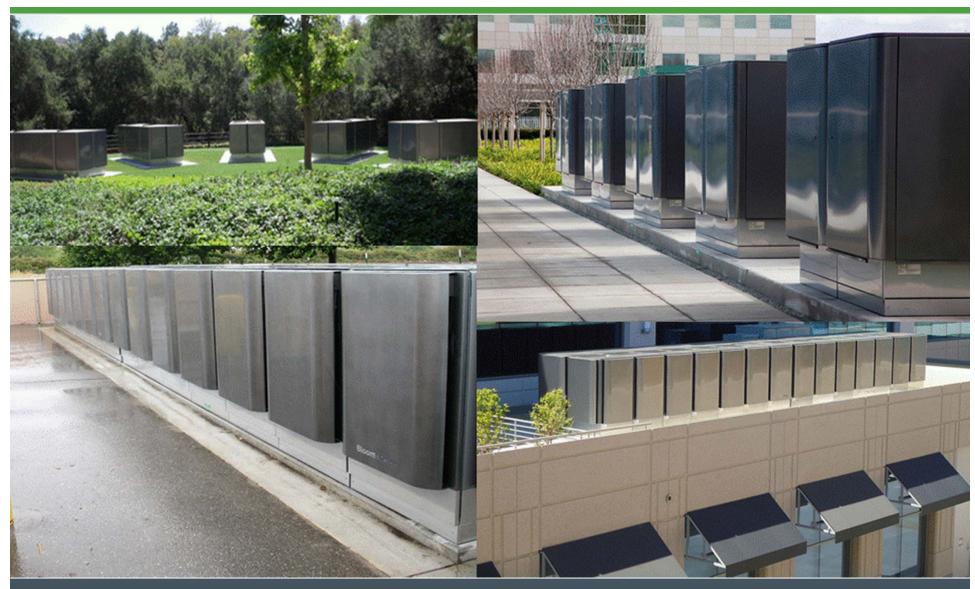




# **Bloom Energy Server Installation**



## **Representative Installations**



**Bloomenergy**<sup>®</sup>

## Exhibit 7

Fire Prevention and Emergency Planning

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Bloom Energy Corporation, 1299 Orleans Drive, Sunnyvale, CA 94089 USA
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- 9. Good Housekeeping and Maintenance9.1 Good Housekeeping9.2 Maintenance
- 10. Training

#### 1. FIRE PREVENTION AND EMERGENCY PLANNING OVERVIEW

The following document is provided only as a guide to assist you in complying with national and local codes and requirements, as well as to provide other helpful information. It is not intended to supersede the requirements of any standard. You should review the standards for particular requirements that are applicable to your individual situation, and make adjustments to this program that are specific to your company. You will need to add information relevant to your facility in order to develop an effective, comprehensive program.

#### 2. FUEL CELL SYSTEM INSTALLATION SAFETY FEATURES

The fuel cell system has redundant safety features and in-system checks to ensure that the system will not harm certified technicians or bystanders near the unit. While the actual fuel cells operate at high temperatures, these components do not move, and are contained within many layers of insulation. During normal operation, the unit is cool to the touch and operates quietly.

The fuel cell system is controlled electronically and has internal sensors that continuously measure system operation. If safety circuits detect a condition outside normal operating parameters, the fuel supply is stopped and individual system components are automatically shut down. A Bloom Energy Remote Monitoring and Control Center (RMCC) operator can also remotely initiate any emergency sequence. An Emergency Stop alarm condition initiates an automatic shutdown sequence that puts the fuel cell system into "safe mode" and causes it to stop exporting power. If you have questions about any of these safety features, please contact Bloom Energy.

If you have to shut down your fuel cell system right away—for example, in case of a building fire or electrical hazard—three shutoff controls are installed at your facility external to the system. The locations of these three controls should be known to your facilities manager before operation, and should be noted on your facility diagram that you created with your Bloom Energy account manager. The three shutoffs are the EPO button, the electrical disconnect, and the natural gas shutoff valve.

An Emergency Power Off (EPO) Button cuts all power to all systems and stops
them from exporting power to your building. All natural gas flow is also stopped
within the systems. (The EPO button is on the front/side of the EDM, if an EDM
is installed.) Lift the protective cover and break the glass seal that covers the
button with the attached hammer. After the glass seal is broken, the shutdown
sequence will automatically begin.



Figure 1: Emergency Power Off Button

• An electrical disconnect manually disconnects systems from the grid if needed. Pressing the EPO button should already stop any power transmission, but it does not hurt the systems to also open this disconnect if you believe it is needed. The location of this disconnect will vary, however it is typically located near the point of interconnection where the wires from the fuel cell installation meet the facility's electrical framework. This may be inside your facility's electrical room, or if the fuel cell installation is near the electrical room, it may be found within the switchgear that Bloom Energy installs. This location of this disconnect is shown on the Site Map (see below) and is labeled "(name of electrical utility) Lockable Visible Generator Disconnect Switch".



Figure 2: Electrical Disconnect

• A **manual natural gas valve** shuts down all natural gas to the system. If the valve operator is perpendicular to the pipe, the valve is shut. If it is parallel with the pipe, the valve is open.



Figure 3: Manual Natural Gas Valve

### Site map:

- An overhead site map showing the location of all safety features will be posted throughout the fuel cell installation
- Electronic copies are available to you for use in your site planning

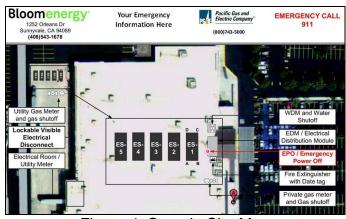


Figure 4: Sample Site Map

#### **Manual controls:**

- Clearly marked emergency stop button labeled "Fuel Cell Emergency Shut Down" located at site
- Two manual fuel shutoff valves outside the system, and two isolation valves inside the system

#### Fire hazard mitigation:

- System is plumbed directly to utility-provided natural gas
- If system input gas pressure is compromised, a pressure switch triggers an emergency system shutdown and fuel input is isolated
- System does not use fuel compressors or pumps
- System has virtually no stored fuel (internal capacity is < 5 scf)</li>

#### **Electrical hazard and mitigation:**

- System operates at 480V
- Signs inside the system warn of the risk of electric shock
- System has backfeed protection
- System inverter prevents grid backfeed during a power outage

### Mechanical hazard and mitigation:

- Finger/hand guard protection is provided on all fans
- All moving parts are located behind secured doors

### Material hazard mitigation:

- Desulfurizer bed (to remove fuel impurities) are fully enclosed
- · Maintained and serviced by licensed vendors

#### 3. EMERGENCY NOTIFICATION PROCEDURES

## **Life-Threatening Emergencies**

To report <u>life-threatening</u> emergencies, immediately call:

Fire: 911 Ambulance: 911 Police: 911

Conditions that require automatic emergency notification include:

- Unconscious Victim
- Seizure
- Major Trauma
- Chest Pains
- Difficulty Breathing
- Flames

#### **Non-Life-Threatening Emergencies**

For <u>non-life-threatening</u> emergencies, report the incident to the local safety control center.

When you report an emergency, give the following information:

- Exact nature of the emergency (describe as clearly and accurately as possible).
- Exact location (i.e., address, building, floor, area, department, etc.).
- Telephone number from which you are calling.
- Your full name.
- **Do not hang up,** as additional information may be needed.

To assist in any subsequent investigation or determination of corrective actions, it is recommended to record the following items as close to the incident time as possible:

Summary of any violation

- Identification of responsible parties
- Identification of victims and witnesses
- Description of evidence
- Description of general conditions
- · Description of any vehicles involved
- Narratives from witnesses
- Any photographs

#### 4. FIRE OR SMOKE PROCEDURES

This section describes the procedures involving a fire or smoke. A major fire is one that requires the use of more than one fire extinguisher or takes more than one minute to extinguish.

If you discover a fire or smoke:

- 1. Activate the nearest fire alarm if not activated already.
- 2. Activate the fuel cell Emergency Stop if possible.
- 3. Shut off the fuel cell installation natural gas line if possible.
- 4. If the fire is small and does not pose an immediate risk to personal safety, you may attempt to extinguish it with a portable fire extinguisher **only if trained to do so**.
- 5. Avoid using water on electrical fires.
- 6. Report every fire, regardless of size, immediately. Smoke or the smell of smoke should be reported.
  - From a safe location dial 911.
  - Report the incident to the local security safety center.

#### 5. MEDICAL EMERGENCY PROCEDURES

This section describes the necessary procedures for injuries or illnesses that may occur under extreme conditions.

A serious injury can be <u>life-threatening</u> and will require immediate medical attention. Injuries can include head injuries, spine injuries, broken bones, heart attack, stroke, loss of consciousness, excessive bleeding, chemical exposure, etc.

A non-serious injury <u>is not immediately life-threatening</u> but may still require the attention of a medical doctor. These can include headaches, nausea, itching, cuts, burns, etc.

#### **Life-Threatening Medical Emergency**

- 1. Remain calm.
- 2. Immediately dial 911.
- 3. Report the incident to local security safety center.
- 4. Do not move the victim unless it is absolutely necessary.
- 5. Call out for personnel trained in first aid and/or CPR which may include Building Evacuation or Emergency Response team members.

- 6. Ask someone to bring the area first aid kit and Automated External Defibrillator.
- 7. Assist if capable or asked to do so.

## Non-Life-Threatening Medical Emergency

- 1. Remain calm.
- 2. Report the incident to the local security safety center.
- 3. Do not move the victim unless it is absolutely necessary.
- 4. Call out for personnel trained in first aid.
- 5. Ask someone to bring the area first aid kit.
- 6. If the victim requires further medical attention, then direct them to the nearest approved medical clinic or hospital Contact Security or Human Resources for assistance if needed.
- 7. The injured employee's supervisor/manager is responsible for ensuring injury forms are properly filled out. Complete the forms within 24 hours of incident and submit to the injury reporting system for follow-up. Follow company protocols.

## 6. MATERIALS RELEASE PROCEDURES

The fuel cell system does not pose a hazard to health or environment. However, some internal materials when released, may pose a irritation risk to people and a possible risk of fire if not properly handled. This section was designed to address potential material release events:

In case of a material release that poses a direct threat to health, safety, or the environment:

- 1. Report the incident to local safety/security office.
- 2. If extremely life-threatening immediately dial 911 followed with a call to Security.
- 3. Contain the spill.
- 4. Evacuate the area or building if the material release is determined to be lifethreatening.

In the event of an <u>unknown indoor smell or odor</u>, report the incident to authorities responsible for HAZMAT and spills.

### 7. NATURAL DISASTERS AND SEVERE WEATHER

#### 7.1 Earthquake

This section provides information and procedures for earthquake emergencies.

The fuel cell system is designed to automatically shut off if the natural gas supply is compromised.

The natural gas supply line has an external, manual shut-off valve that should be activated if it is safe to do so. This valve will be labeled, "Notice – Fuel Cell Gas Shut

Off". The natural gas line will be labeled with the word "gas" on a yellow background with an arrow pointing in the direction of flow.

The nearby Emergency Stop can be activated to stop the flow of fuel and power to/from the fuel cell system.

A Bloom Energy Field Engineer will validate site safety and system operation during/after severe weather as necessary.

#### 7.2 Flood

The fuel cell system support pad is designed to divert water flow. However, if flooding conditions exist, or threaten to exist due to heavy rainfall, creek bank overflows, or pipe breakage, then immediately report the incident to the local safety/security office.

Do not use the fuel cell power system if any part has been under water. If it is safe to reach the Emergency Power Off button for the site without entering the water, stop all systems until a Bloom Energy representative can assess the site.

Precautions to follow after a flood:

- <u>Stay out of flooded areas</u>. Flooded areas remain unsafe. Entering a flooded area places you at risk.
- <u>Notify Bloom Energy</u>. A Bloom Energy Field Engineer will validate site safety and system operation during/after severe weather as necessary

#### 8. UTILITY OUTAGE

The fuel cell system is operated in "Grid-Parallel" mode. If utility provided power is lost for any reason, the fuel cell system will go "off-line". The fuel cell system will remain in stand-by mode until it automatically senses the utility grid has been restored. If utility gas is shut down, the fuel cell system will begin to shut down completely.

The Bloom Energy Remote Monitoring Control Centers monitor the fuel cells 24 hours per day and will be alerted to utility grid interruptions via its controls software. A Field Service Engineer will be dispatched to restart the fuel cell system if necessary. Customer personnel should NOT attempt to start up or operate the fuel cell system.

#### **Before a Planned Outage**

- Notify the Bloom Energy Remote Monitoring Control Center at 1-408-543-1678 at least 24 hours before planned outage.
- Bloom Energy Remote Monitoring Engineers will reduce power generated by the fuel cell system and take the fuel cell off-line.
- · Abrupt fuel cell system shutdowns may cause significant system damage.

### **During a Utility Power Loss**

- The fuel cell system will automatically go off-line.
- The Bloom Energy Remote Monitoring Control Centers will monitor the fuel cell system.
- Bloom Energy Field Service will be dispatched to start up the fuel cell system as necessary.
- If the fuel cell system has been automatically shut down and utility power is restored, there will be no impact to building power delivery: primary power will come from the utility rather than the fuel cells.

### 9. GOOD HOUSEKEEPING AND MAINTENANCE

## 9.1 Good Housekeeping

Although extremely unlikely, to minimize the risk of fire and any incidents, Facility Managers should take the following precautions around the fuel cell installation:

- What to do if you smell gas:
  - Do not try to light any appliance
  - o Do not touch any electrical switch; do not use any phone in the area
  - Leave the area immediately
  - o Immediately call your gas supplier. Follow the gas supplier's instructions.
  - o If you cannot reach your gas supplier, call the fire department
- Notify Bloom Energy Remote Monitoring Control Center at 1-408-543-1678 of any condition that would impair the safety of the fuel cell installation so that mitigation measures could be determined and placed into effect.
- Prohibit smoking within the area of the fuel cell installation. Bloom Energy will furnish No Smoking signs for the area.
- Ensure only Bloom Energy Service Providers are permitted access inside the system.
- Keep the area around the fuel cell installation clear for ten feet in all directions, for safety and ease of maintenance.
- Keep the area around the fuel cell power system clear and free of combustible materials, gasoline, and other flammable vapors and liquids.
- Shut the system down and call Bloom Energy immediately if you suspect a fuel line rupture.
- **Never enclose an operating system** in a tarp, tent, shed, or other structure that would allow air to become trapped. This system runs on natural gas, and produces trace amounts of CO and CO2. The amounts of these gases are safe for normal outdoor operation but could gather in an enclosed place.
- Do not block or obstruct air openings on the fuel cell power system. This system requires air flow in order to operate.

- Do not use this fuel cell power system if any part has been under water.
   Immediately call qualified service personnel to inspect the fuel cell power system and to replace any functional part which has been under water.
- Please contact Bloom Energy at 408-543-1678 with as much advance notice as possible if you plan, detect, or suspect a prolonged Internet outage.
- The Bloom Energy Field Service team will periodically clean the equipment; do not spray with pressurized hoses.

#### 9.2 Maintenance

Your site has specific Field Service personnel assigned to it for both routine maintenance and troubleshooting. Your site project manager will introduce you to the designated Bloom Energy Field Service team assigned to your site prior to operation.

Bloom Energy Field Service personnel are trained in state Safety Law. They are trained in all the procedures required for the fuel cell installation, and their toolkit includes all the safety equipment required to work around the fuel components and high voltage in our system (480VAC).

Bloom Energy also requires its employees to follow all necessary safety precautions, including:

- Every time a Field Service technician arrives at a site for the first time and opens
  a service panel, the technician will use a leak detector to determine whether
  there is any gas buildup in the system and determine that it is safe to work on it.
- Whenever a Field Service technician is removing and replacing a component on a fuel or exhaust line, the technician must keep a CO detector nearby to make sure that no CO is present in the line even after the system has been shut down.

The Field Service team expects to conduct quarterly and yearly preventative maintenance for certain types of consumable or cleanable components such as replacement of air filters, water filters, and desulfurizer beds. Other maintenance will be performed as required. During such times, inspections for any hazards will be conducted including quarterly fire extinguisher inspection (if applicable).

#### 10. TRAINING

Prior to system startup, a Bloom Energy representative will provide training on the fuel cell installation to include the location and operation of safety features as well as actions to take during emergencies. We desire this training to provide lasting value and are more than happy to work with you to customize the experience to suit your needs.

## Exhibit 8



### **Mei Wu Acoustics**

Experts in acoustics, noise and vibration

To: Justin Adams, Bloom Energy justin.adams@bloomenergy.com From:

Joshua Marcley, Mei Wu Acoustics josh@mei-wu.com **Tyler Adams, Mei Wu Acoustics** tyler.adams@mei-wu.com meiwu@mei-wu.com

Mei Wu, Mei Wu Acoustics

Date: October 17, 2016 Subject: Bloom Energy - Frontier Communications - Norwalk, CT

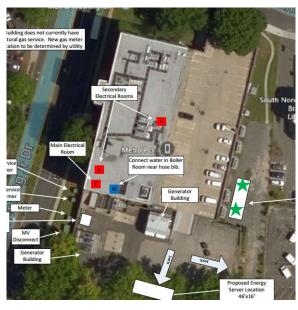
MWA Project - 16079

Mei Wu Acoustics (MWA) has predicted the sound levels produced by the proposed fuel cell energy server system at 2 Washington St, Norwalk, CT. In addition, MWA conducted 24-hour sound level measurements at the site to establish the existing ambient environmental sound levels in order to compare predicted noise levels with existing conditions and demonstrate compliance with the code requirements.

#### **Project Overview** 1.

The proposed equipment will consist of a two (2) ES-5 Linear energy servers. The following figure provides a site plan showing the fuel cells at the southern edge of the property, which is across Monroe Street from a residential use district.





1

Figure 1: Site plan showing location of fuel-cells (green stars) and property outline (yellow outline)

#### 2. Noise Criteria

This section documents the environmental noise criteria and code requirements applicable the project site.

#### 2.1. Norwalk Municipal Code

An excerpt of relevant portions of this code is provided here for reference:

#### Chapter 18 – Offenses and Miscellaneous Provisions Article II – Noise Control

#### Sec. 18.73- Definitions

- a. Ambient noise or background noise means a noise of a measurable intensity which exists at a point as a result of a combination of many distant individually indistinguishable sources. In statistical terms, it is the level which is exceeded ninety (90) percent of the time (L90) in which the measurement is taken.
- c. Commercial zone means all commercial districts and business districts, including BA, BB, BC, BD, BD-1 and BE as defined in the zoning regulations of the City of Norwalk, and all uses associated therewith permitted either as a right or as a special use.
- g. Daytime hours means the hours between 7:00 a.m. and 10:00 p.m. Mondays through Saturdays, and the hours of 9:00 a.m. through 9:00 p.m. Sundays and federal and state holidays. Unless otherwise provided, all other hours shall be construed as nighttime hours.
- t. Noise level means the sound-pressure level in decibels as measured with a sound-level meter using the A-weighting network. The level so read is designated dB(A) or dBA.
- w. Property line means that real or imaginary line along the ground surface and its vertical extension which separates real property owned or controlled by any person from contiguous real property owned or controlled by another person, and separates real property from the public right-of-way.
- aa. Residential zone means all city-owned property used for recreational or educational purposes, all residential districts (RS-1, RS-2, RM-1, RM-2, RH-1, RH-2 and RO), any commercial district when used for residential purposes, as defined in the zoning regulations of the City of Norwalk as they are amended from time to time, and all uses permitted therewith either as a right or as a special use.

#### Sec. 18.75- Noise Level

- a. It shall be unlawful for any person to emit or cause to be emitted any noise beyond the boundaries of his/her premises in excess of the noise levels established in these regulations as amended from time to time.
- b. Noise Level Standards
- 2. No person in a commercial zone shall emit noise beyond the boundary of his/her premises that exceeds the levels stated herein, and applies to adjacent residential, commercial or industrial zones:

Emitter's zone: Commercial Receptor's zone: Maximum level:

Industrial .....62 dBA Commercial .....62 dBA Residential/Day .....55 dBA Residential/Night .....45 dBA

#### Sec. 18.76 - High background noise levels and impulse noise.

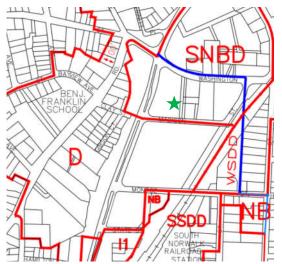
- a. If background noise levels caused by sources not subject to these regulations exceed the standards contained herein as amended from time to time, a source shall be considered to cause excessive noise if its emission exceeds the background noise levels by five (5) decibels, provided that no source subject to this article shall emit noise in excess of eighty (80) decibels at any time, and provided that this section does not decrease the permissible levels of other sections of this chapter as amended from time to time.
- b. No person shall cause or allow the emission of impulse noise in excess of eighty (80) decibels peak sound-pressure level during the nighttime to any residential noise zone.
- c. No person shall cause or allow the emission of impulse noise in excess of one hundred (100) decibels peak sound-pressure level at any time in any zone.

#### 2.2. Norwalk City Plan

MWA has reviewed the Norwalk City Plan and was not able to locate a "Noise Element" portion of this general plan. The Noise Element typically provides goals and policies to guide compatible land uses and the incorporation of noise attenuation measures for new uses to protect people living and working in the City from an excessive noise environment.

#### 2.3. Norwalk Zoning Map

The following figure provides a zoning map of the areas surrounding the project site. As shown, the project site is zoned SNBD – South Norwalk Business District. To the west and south are residential.



**SNBD** – South Norwalk Business District **D** – Residential

**WSDD** – Washington St Design District

Figure 2: Norwalk Zoning Map – Approximate location of fuel cells indicated by green star.

#### 2.4. Connecticut Department of Energy and Environmental Protection (DEEP)

The Connecticut Siting Council (Council) is an autonomous agency residing within the merged Department of Energy and Environmental Protection (DEEP). The following is an except of their noise requirements:

#### Sec.22a-69-1 Definitions

- (h) daytime means 7:00 a.m. to 10:00 p.m. local time.
- (n) nighttime means 10:00 p.m. to 7:00 a.m. local time.

#### Sec.22a-69-1.2 Acoustic Terminology and definitions

- (c) **background noise** means noise which exists at a point as a result of the combination of many distant sources, individually indistinguishable. In statistical terms, it is the level which is exceeded 90% of the time (L90) in which the measurement is taken.
- (f) **excessive noise** means emitter Noise Zone levels from stationary noise sources exceeding the Standards set forth in Section 3 of these Regulations beyond the boundary of adjacent Noise Zones.

#### Sec.22a-69-2 Classification of land according to use

Sec. 22a-69-2.1. Basis Noisy Zone classifications shall be based on the actual use of any parcel or tract under single ownership as detailed by the Standard Land Use Classification Manual of Connecticut

#### Sec. 22a-69-2.2. Multiple uses

Where multiple uses exist within a given Noise Zone, the least restrictive land use category for the Emitter and Receptor shall apply regarding the noise standards specified in Section 3 of these Regulations.

#### Sec. 22a-69-2.3. Class A noise zone

Lands designated Class A shall generally be residential areas where human beings sleep or areas where serenity and tranquility are essential to the intended use of the land. Class A Land Use Category. The land uses in this category shall include, but not be limited to, single and multiple family homes, hotels, prisons, hospitals, religious facilities, cultural activities, forest preserves, and land intended for residential or special uses requiring such protection

#### Sec. 22a-69-2.4. Class B noise zone

Lands designated Class B shall generally be commercial in nature, areas where human beings converse and such conversation is essential to the intended use of the land.

#### Sec. 22a-69-3. Allowable Noise Levels

#### Sec. 22a-69-3.1. General prohibition

No person shall cause or allow the emission of excessive noise beyond the boundaries of his/her Noise Zone so as to violate any provisions of these Regulation

#### Sec. 22a-69-3.5. Noise zone standards

(b) No person in a Class B Noise Zone shall emit noise exceeding the levels stated herein and applicable to adjacent

#### Noise Zones:

	Class C Receiver	Class B Receiver	Class A Receiver Day	Class A Receiver Night
Class B Emitter	62 dBA	62 dBA	55 dBA	45 dBA

Levels emitted in excess of the values listed above shall be considered excessive noise.

#### Sec. 22a-69-3.6. High background noise areas

In those individual cases where the background noise levels caused by sources not subject to these Regulations exceed the standards contained herein, a source shall be considered to cause excessive noise if the noise emitted by such source exceeds the background noise level by 5 dBA, provided that no source subject to the provisions of Section 3 shall emit noise in excess of 80 dBA at any time, and provided that this Section does not decrease the permissible levels of the other Sections of this Regulation

#### 2.5. Summary of Noise Criteria

- The fuel cells produce steady, broadband noise. Therefore tonal, fluctuating, or impulsive penalties will not be applied.
- The project site is zoned business/commercial and is a commercial use. The nearest neighboring use is commercial/business to the east. There is a residential use across Monroe St to the south.

#### DEEP Requirements

- According to the Noise Zone Standards, the neighboring residential district boundary should not exceed 45 dBA at nighttime; neighboring commercial properties should not exceed 62 dBA.
- The code allows for an exception to the above standard for "high background noise areas". In which case, the noise level should not exceed 5 dBA above the background noise level (L90).

#### Norwalk City Requirements

- The Norwalk municipal code requirements are similar to the DEEP requirements refer to summary above.
- Norwalk does not have a Noise Element in their General Plan.

#### 3. Environmental Ambient Sound Level Measurements

#### 3.1. Site visit details

MWA personnel: Joshua Marcley

Date and time: 9/27/2016 10:00 AM – 9/28/2016 9:00 AM Equipment used: Cesva SC160, Type II sound level meter

#### 3.2. Measurement procedure

A sound level meter was installed on a tree on the edge of the southern property line (the neasrest adjacency to residential use). Ambient sounds were comprised primarily of traffic from Dr. Martin Luther King Jr Drive and Monroe Street.

The sound level meter recorded A-weighted L<sub>eq</sub>, L<sub>1</sub>, L<sub>5</sub>, L<sub>10</sub>, L<sub>50</sub>, L<sub>90</sub>, L<sub>95</sub>, and L<sub>99</sub> levels every one (1) minute for the time period described above. The meter was equipped with a windscreen. The measurement was aborted after 23 hours, 20 minutes due to weather concerns. The last 20 minutes of collected data is averaged and extrapolated to represent the entire final hour of the measurement.

#### 3.3. Measurement Period Weather Conditions

The following table provides the weather conditions during the measurement period.

Date	9/27/2016	9/28/2016
Mean Temp.	66° F	59° F
Max Temp.	73° F	66° F
Min Temp.	57° F	54° F
Avg. Humidity	80%	84%
Avg. Wind Speed	5 mph [W]	7 mph [NE]
Precipitation	0.42 in	0.00 in

**Table 1:** Measurement weather conditions

#### 3.4. Measurement Results

The following table provides the hourly average sound level measurements. All measurements indicated are given in dBA (A-weighted). LAeq is the average measured level for the entire 1-hour measurement period. L1/10/L90/L99 are statistical averages — for example, L10 indicates the level that was present for 10% of the time, whereas L90 indicates the level present for 90% of the measurement period. L99 & L90 are considered representative of the steady background sound levels, whereas L1 & L10 may suggest more infrequent and transient activities in the environment (door slams, car alarms, dog barking, etc.). The quietest 1-Hour L90 was **55.4 dBA**, measured from 6-7PM.

Hour	L1	L10	L90	L99	LAeq			
10:00 AM	69.1	64.3	55.7	55.0	61.0			
11:00 AM	70.4	65.0	56.6	55.7	61.8			
12:00 PM	77.1	68.7	57.0	56.0	65.5			
1:00 PM	73.5	66.8	56.4	55.4	63.4			
2:00 PM	75.0	64.9	56.0	55.1	62.3			
3:00 PM	69.9	64.3	56.3	55.6	61.2			
4:00 PM	77.1	63.6	56.1	55.4	62.6			
5:00 PM	66.3	62.3	55.7	55.0	59.5			
6:00 PM	64.4	60.9	55.4	54.8	58.3			
7:00 PM	65.4	61.1	55.7	55.0	58.6			
8:00 PM	65.2	61.1	57.0	56.3	59.1			
9:00 PM	69.1	61.9	57.2	56.4	60.0			
10:00 PM	66.4	61.2	56.5	56.0	58.9			
11:00 PM	68.1	62.3	58.3	57.5	60.7			
12:00 AM	70.1	64.1	57.9	57.1	61.4			
1:00 AM	72.7	65.7	57.0	56.3	62.6			
2:00 AM	66.6	63.3	58.8	58.1	61.2			
3:00 AM	74.3	68.0	60.2	59.5	65.0			
4:00 AM	75.2	68.8	60.0	59.0	65.6			
5:00 AM	76.9	69.8	61.1	60.0	66.7			
6:00 AM	74.9	68.9	62.3	61.2	66.4			
7:00 AM	73.8	69.3	61.9	60.2	66.6			
8:00 AM	72.6	68.2	60.6	59.6	65.1			
9:00 AM	69.4	63.1	57.0	56.2	60.7			
CNEL								

Table 2: Hourly environmental sound level measurements – 9/27 – 9/28/2016 (dBA)

The following figure plots the 1-minute average measurements for a period of 24-hours, showing the difference between the LO1/L99 percentiles and the LAeq average.

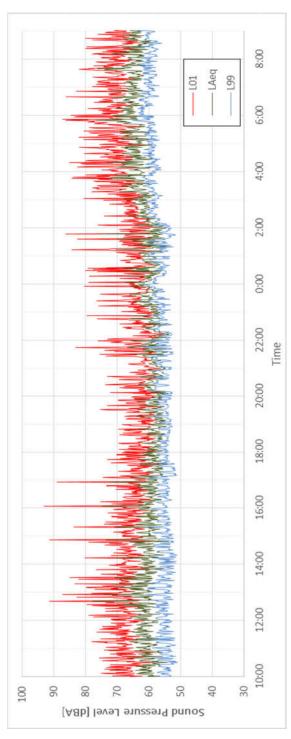


Figure 3: 1-minute average measurements plotted over the measurement period.

#### 4. Calculation and Prediction of Energy Server Noise Impacts to Adjacent Properties

Sound power levels for the energy server were used to calculate sound transmission to adjacent properties. As we understand it, the ES-5 (also referred to as ES-5 Linear) system will be installed. Sound power levels for the ES-5 Linear were provided in a MWA report dated June 21, 2016, and updated on August 30, 2016. The following table provides the total sound power for a single fuel cell. The following table provides the total sound power for a single fuel cell.

	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	LwA
ES-5 Linear	77.9 dB	80.9 dB	84.1 dB	82.3 dB	80.5 dB	76.9 dB	69.4 dB	84.9 dB

**Table 3:** Sound power levels (dB re 10<sup>-12</sup> W) for a single ES-5 Linear.

Our calculations considered the sound power of the units (above x2), reflections from surrounding buildings and structures, and distance attenuation. The following figure provides the predicted sound pressure level at the nearest adjacent properties. The fuel cells are assumed to be oriented such that the rear of the units faces the nearest property line (i.e. to the east). The rear of the units is significantly quieter than the front and should be configured in this manner to reduce noise emissions to the nearest sensitive neighbors.



**Figure 4:** Satellite view of the project site identifying the measurement location (orange); the proposed location of the fuel cells (green). Numbers indicate the predicted sound pressure level due to the fuel cells (in dBA).

#### 5. Summary & Conclusion

Due to the adjacency of the project site to a major road the noise environmental at the site is sufficiently be classified as a "high background noise area" as defined by DEEP (section 2.4 of this report). Therefore, noise from the fuel cell can be shown to be compliant with the code requirements by the demonstrating the sound levels are no more than 5 dBA above the L90 background noise level (DEEP Sec. 22a-69-3.6. /Norwalk Municipal Sec. 18.76)

The quietest L90 measured was **55.8 dBA** L90, measured from 6–7PM. According to our calculations, the transmitted sound levels from the fuel cells will be approximately **47.6 dBA** at the nearest property line, and **35.8 dBA** at the nearest point along the residential district boundary. This level

significantly less than the quietest measured background noise level. It should be noted that project generated noise levels are compliant with the DEEP requirements before the high background noise area exception is applied. The proposed fuel cell is therefore compliant with the code requirement. No additional mitigation measures are recommended.

This concludes our report. Please contact Mei Wu Acoustics if there are any questions or comments regarding this document.

\* \* \*

## Exhibit 9

## Notice and Service List Pursuant to Conn. Agencies Regs. § 16-50j-40(a)

Municipal and Elected Officials

Last Name	First Name	Title	Address	City	State	Zip
Rilling	Harry	Mayor, City of Norwalk	125 East Street, PO Box 5125	Norwalk	СТ	06851
Wrinn	Michael	Acting Director, Planning and Zoning	125 East Street, Room 223	Norwalk	СТ	06851
Blumenthal	Richard	U.S. Senator	702 Hart Senate Office Building	Washington	DC	20510
Murphy	Chris	U.S. Senator	B40A Dirksen Senate Office Building	Washington	DC	20510
Himes	Jim	U.S. Representative	1 Grove Street, Suite 600	Bridgeport	СТ	06604
Perone	Chris	State Representative, 137th	State Capital, Room 110	Hartford	СТ	06106
Morris	Bruce	State Representative, 140th	Legislative Office Building, Room 5004	Hartford	СТ	06106
Wood	Terrie	State Representative, 141st	Legislative Office Building, Room 4200	Hartford	СТ	06106
Wilms	Fred	State Representative, 142nd	Legislative Office Building, Room 4200	Hartford	СТ	06106
Lavielle	Gail	State Representative, 143rd	Legislative Office Building, Room 4200	Hartford	СТ	06106
Duff	Bob	State Senator, 13th	Legislative Office Building, Room 3300	Hartford	СТ	06106
Jepsen	George	Connecticut Attorney General	55 Elm Street	Hartford	СТ	06106

Klee	Rob	Commissioner, Development of Energy and Environmental Protection	79 Elm Street	Hartford	СТ	06106
House	Arthur	Chairman, Department of Public Utility Regulatory Authority	10 Franklin Square	New Britain	СТ	06105
Rino	Raul	Commissioner, Department of Public Health Protection	410 Capital Avenue, PO Box 340308	Hartford	СТ	06134
Merrow	Susan	Chair, Council on Environmental Quality	79 Elm Street	Hartford	СТ	06106
Revicky	Steven	Commissioner, Department of Agriculture	165 Capital Avenue	Hartford	СТ	06106
Barnes	Benjamin	Secretary of OPM, Office of Policy and Management	450 Capital Avenue	Hartford	СТ	06106
Redeker	James	Commissioner, Department of Transportation	2800 Berlin Turnpike	Newington	СТ	06111

## **Abutter Properties**

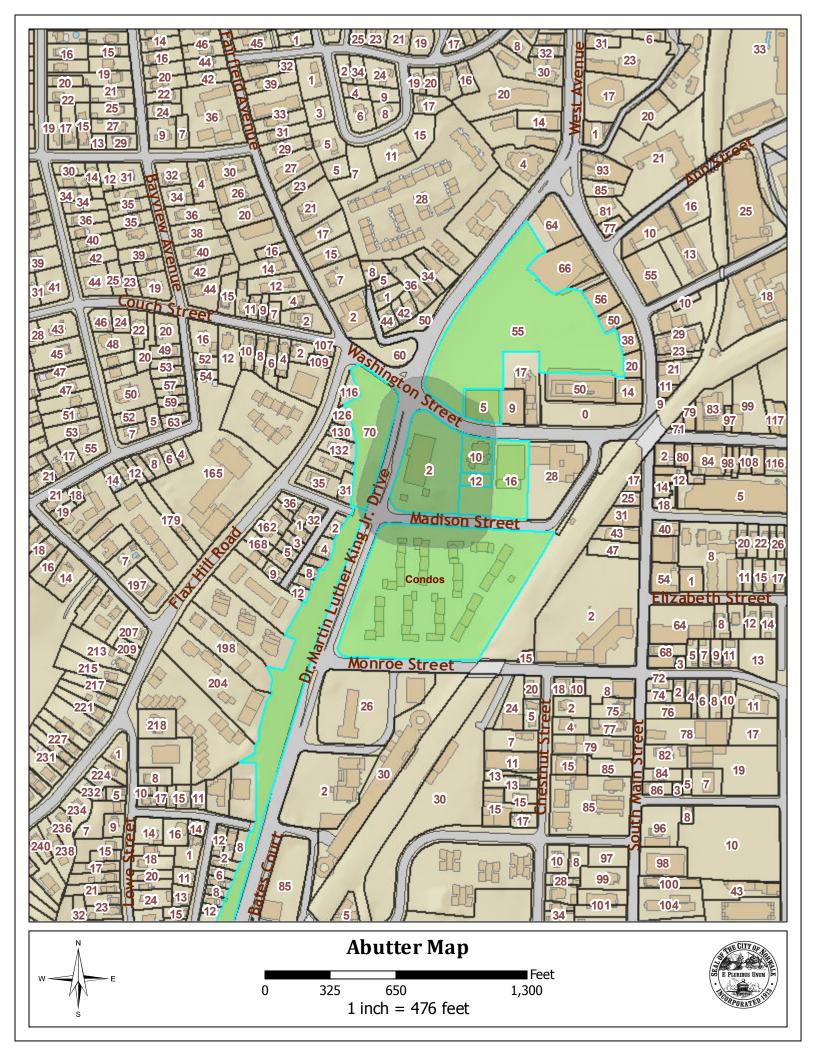
Map ID	Owner Name	Address	City	Stat	Zip
Number				е	
5	CINEMART LLC	PO BOX 2476	WESTPORT	СТ	06880-
					0476
55	NORWALK CITY OF	125 EAST AVE	NORWALK	СТ	06851-
					5702
70	SONO EQUITIES LLC &	C/O PRIME LOCATIONS	NORWALK	СТ	06854
		INC			
2	SO NEW ENGLAND	ONE SBC CENTER RM	ST LOUIS	MO	63101
	TELEPHONE CO	36-M-01			
10	NORWALK CITY OF	125 EAST AVE	NORWALK	CT	06851-
					5702
12	NORWALK CITY OF	125 EAST AVE	NORWALK	CT	06851-
					5702
16	U.S. GOVERNMENT	16 WASHINGTON AVE	NORWALK	CT	06854-
					9809
Condos	BYNES MYRNA L	15 MADISON ST B3	NORWALK	СТ	06854
Condos	MITCHELL RHONDA	15 MADISON ST UNIT	NORWALK	СТ	06854
		В9			
Condos	SIERMAN SUSAN	15 MADISON ST #C10	NORWALK	СТ	06854

Condos	MARTINEZ EVELYN	15 MADISON ST #G8	NORWALK	СТ	06854
Condos	MCQUILLAN EDWARD &	15 MADISON ST APT	NORWALK	СТ	06854
	MCQUILLAN ANNETTE	#C5			
Condos	THEODORIDIS LAZAROS	15 MADISON ST #D5	NORWALK	СТ	06854
Condos	BARRETT JEAN	15 MADISON ST #G1	NORWALK	СТ	06854
Condos	BORGES LOPEZ MARIA & LOPEZ TONY	15 MADISON ST #B1	NORWALK	СТ	06854
Condos	WOODWARD ERNEST	15 MADISON ST #B10	NORWALK	СТ	06854
Condos	LEE ANTHONY & CARRIE	15 MADISON ST #D9	NORWALK	СТ	06854
Condos	DIMITRIADIS LAZAROS & EFTHYMIA M	P.O. BOX 832	NORWALK	СТ	06856
Condos	COOKE RUTH	15 MADISON ST #A14	NORWALK	СТ	06854
Condos	KALOMENIDIS DIMITRIOS	15 MADISON ST #C1	NORWALK	СТ	06854
Condos	GENEROSO CARL & MARISSA	15 MADISON ST UNIT D1	NORWALK	СТ	06854- 2919
Condos	MILLER JEANICA	15 MADISON ST #F2	NORWALK	СТ	06854
Condos	ALMIRAKIS KOSTA & VASILIKI	15 MADISON ST #G2	NORWALK	СТ	06854
Condos	ANGELIDIS ARISTOTELIS & PARESA	15 MADISON ST #B6	NORWALK	СТ	06854
Condos	TYNER DONIASHAY M	15 MADISON ST APT C7	NORWALK	СТ	06854- 2918
Condos	SIMMONS MARVIN & LULA	15 MADISON ST #G3	NORWALK	СТ	06854
Condos	BARI SAYED	15 MADISON ST UNIT G-10	NORWALK	СТ	06854
Condos	LAWRENCE GWENDOLYN	15 MADISON ST #H9	NORWALK	СТ	06854
Condos	AUSTIN MARY LOU	25 MONROE ST UNIT E2	NORWALK	СТ	06854
Condos	SYSKA JOAN	34 WALL ST, STE 1B	NORWALK	СТ	06850- 3429
Condos	MATHIEU GERALD & MARIE LUCIA	15 MADISON A13	NORWALK	СТ	06854
Condos	JAMES ROSA & SHANONI	15 MADISON ST #I-5	NORWALK	СТ	06854
Condos	KEEL DAVIS VELMA	15 MADISON ST #G5	NORWALK	СТ	06854
Condos	HILLIARD DORETTA	15 MADISON ST #H4	NORWALK	СТ	06854
Condos	LOWERY MOORER SHARON	15 MADISON ST #H5	NORWALK	СТ	06854
Condos	AHERN MICHELE	15 MADISON ST #B4	NORWALK	СТ	06854
Condos	LINARTE JOANNE	15 MADISON ST #D6	NORWALK	СТ	06854
Condos	KEITT CORNELIUS	15 MADISON ST #F4	NORWALK	СТ	06854
Condos	INGRAM ANNIE	15 MADISON ST #A12	NORWALK	СТ	06854
Condos	STEWART EMMA	15 MADISON ST #A11	NORWALK	СТ	06854
Condos	BRADLEY CURTIS & JENNIFER	PO BOX 2222	NORWALK	СТ	06852
Condos	COUGHLAN PETER G JR	15 MADISON ST #A10	NORWALK	СТ	06854
Condos	BROWN LASHAUN & THEODORE	15 MADISON ST #G12	NORWALK	СТ	06854

	1.1.1.10.10.10.10.10.10.10.10.10.10.10.1	15.445.050.05 W.4		T	1000=4
Condos	MAVRIDIS CHRISTOS	15 MADISON ST #I1	NORWALK	СТ	06854
Condos	PARENT FRANK	15 MADISON ST #E3	NORWALK	СТ	06854
Condos	COUGHLAN COLLEEN	15 MADISON ST #F10	NORWALK	СТ	06854
Condos	AUSTIN ELAINE	15 MADISON ST #E4	NORWALK	СТ	06854
Condos	RIDER ELEANOR	15 MADISON ST #F11	NORWALK	CT	06854
Condos	LASKAWIEC KAZIMER	15 MADISON ST #A9	NORWALK	CT	06854
Condos	PRESTON JOHN G & SAMANTHA	15 MADISON ST #A8	NORWALK	СТ	06854
Condos	ROSA LUIS & MARIA	15 MADISON ST #I7	NORWALK	СТ	06854
Condos	SOTO-MURALLES ARTURO	15 MADISON ST APT G7	NORWALK	СТ	06854- 2956
Condos	TOWNE HS GDNS COOPERATIVE INC	93 DEMING RD., SUITE A	BERLIN	СТ	06037
Condos	KEEL PATTY A	25 MONROE ST APT H7	NORWALK	СТ	06854- 2911
Condos	IGNATIADIS PARTHENA	15 MADISON ST.	NORWALK	СТ	06854
Condos	PELZER WAYNE & DEBRA	15 MADISON ST #F6	NORWALK	СТ	06854
Condos	BRYANT CLIFTON D & CHELSEA	15 MADISON ST UNIT A7	NORWALK	СТ	06854
Condos	COOKE SHARI	15 MADISON ST #A6	NORWALK	СТ	06854
Condos	ALMIRAKIS CHRISTINA	15 MADISON ST UNIT H1	NORWALK	СТ	06854- 2922
Condos	MARTINEZ EVARISTO & NILDA	15 MADISON ST #I2	NORWALK	СТ	06854
Condos	GRAY HELEN	15 MADISON ST #H2	NORWALK	СТ	06854
Condos	THOMPSON WENDY	15 MADISON ST #I3	NORWALK	СТ	06854
Condos	LANE DOROTHEA	15 MADISON ST UNIT F1	NORWALK	СТ	06854
Condos	WHITTINGHAM EVERETTE & JANET	15 MADISON ST #C11	NORWALK	СТ	06854
Condos	HINES LIZ	15 MADISON ST #18	NORWALK	СТ	06854
Condos	BOTAQUI JOSE E	15 MADISON ST APT A5	NORWALK	СТ	06854
Condos	ASLANIDIS KONSTANTINOS	15 MADISON ST #A4	NORWALK	СТ	06854
Condos	STEWART BENJAMIN & MARY	15 MADISON ST #I9	NORWALK	СТ	06854
Condos	MURPHY PATRICIA P	15 MADISON ST #G9	NORWALK	СТ	06854
Condos	PRESTON MICHAEL & SHIRLEY	15 MADISON ST #H8	NORWALK	СТ	06854
Condos	MOORE MARTIN	15 MADISON ST #B5	NORWALK	СТ	06854
Condos	MALCOLM GWENDOLYN	15 MADISON ST #C6	NORWALK	СТ	06854
Condos	AUSTIN MARY ANN	15 MADISON ST #E1	NORWALK	СТ	06854
Condos	PANTSERIDES SOPHIA SOPHIE	15 MADISON ST UNIT F8	NORWALK	СТ	06854
Condos	IRELAND RALPH	15 MADISON ST #A3	NORWALK	СТ	06854

Condos	MASON CHERYL & AARON	15 MADISON ST #I4	NORWALK	СТ	06854
Condos	BONET JASON & SANDY	15 MADSION ST #G4	NORWALK	СТ	06854
Condos	OLIVER CARL & SONJA	15 MADISON ST #H3	NORWALK	СТ	06854
Condos	NELSON EVON	15 MADISON ST #F3	NORWALK	СТ	06854
Condos	DIMITRAIADIS	15 MADISON ST #C2	NORWALK	СТ	06854
	KONSTANTINOS				
Condos	ASLANDIS ALEX & PENNY	15 MADISON ST #D2	NORWALK	СТ	06854
Condos	LEWIS TANESHA	15 MADISON ST A2	NORWALK	СТ	06854
Condos	BARRETT KATHERINE	631 HANCOCK BRIDGE	CAPE	FL	33990-
		PKWY	CORAL		1151
Condos	BRADLEY CURTIS & JENNIFER	PO BOX 2222	NORWALK	CT	06852
Condos	MURPHY SANDRA	15 MADISON ST #B7	NORWALK	СТ	06854
Condos	MOORE MAZIE L	15 MADISON ST #C8	NORWALK	СТ	06854
Condos	ROSELLE RICHARD &	15 MADISON ST #A1	NORWALK	СТ	06854
	DEBORAH				
Condos	LYONS CHARLES E & MARY B	15 MADISON ST #I6	NORWALK	СТ	06854
Condos	GRANT JOHNETTE	15 MADISON ST #G6	NORWALK	СТ	06854
Condos	ROBERSON MARGIE	15 MADISON ST #C3	NORWALK	СТ	06854
Condos	QUIGANO ANNE	15 MADISON ST #D3	NORWALK	СТ	06854
Condos	ASLANIDIS KALLIOPI	15 MADISON ST #D7	NORWALK	СТ	06854
Condos	LOMBA ANNIE RUTH &	15 MADISON ST #C4	NORWALK	СТ	06854
	LOMBA TARA F				
Condos	HIDALGO PATRICIA	15 MADISON ST #D4	NORWALK	СТ	06854
Condos	SIMMS JESSIE	15 MADISON ST #B2	NORWALK	СТ	06854
Condos	SMITH JOE F & SADIE S	15 MADISON ST #B8	NORWALK	СТ	06854
Condos	LOPEZ BEATRICE & VINCENT	15 MADISON ST #C9	NORWALK	СТ	06854

## Exhibit 10



## Exhibit 11

VIA FIRST CLASS MAIL

10/11/2016

RE:

Petition for Bloom Energy, as Agent for Frontier Communications, for the installation of two (2) new ES-5 Bloom Energy Servers solid oxide fuel cells which provide 400 kW of Customer-Side Distributed Resource at – 2 Washington Street, Norwalk, Connecticut

Dear Ladies and Gentlemen:

Pursuant to Section 16-50j-40 of the Connecticut Siting Council's (the "Council") regulations, we are notifying you that Frontier Communications Corp. intends to file on or shortly after October 17, 2016, a petition for declaratory ruling with the Council. The petition will request the Council's approval of the location and construction of an approximately 400 kilowatt Bloom Energy Corporation fuel cell facility and associated equipment (the "Facility"), located at the site of the Frontier Communications building at 2 Washington Street, Norwalk, Connecticut (the "Site"). Electricity generated by the Facility will be consumed primarily at the Site, and any excess electricity will be exported to the electric grid. The Facility will be fueled by natural gas.

The proposed placement of the fuel cells is at the rear of the building where existing mechanical equipment are currently located. In total, the proposed facility will be approximately 70 feet long, 4 feet wide, and 7 feet high.

If you have any questions regarding the proposed Facility, please contact the undersigned or the Council.

Respectfully,

Justin Adams

justin.adams@bloomenergy.com

10/11/2016

Via certified mail 125 East Street PO Box 5125 Norwalk, CT 06851

Attn:

Harry Rilling, Mayor of Norwalk

RE:

Bloom Energy Clean Energy Server Installation Frontier - 2 Washington Street,

Norwalk, Connecticut

Mr. Rilling,

On behalf of Bloom Energy we would like to provide you with information pertaining to the proposed clean energy server installation project located at the Frontier Communications, 2 Washington Street.

This project proposes to install two (2) new ES-5 Bloom Energy Servers; a new class of distributed power generator which produces clean, reliable and affordable electricity at the customer site. Bloom Energy Server contains solid oxide fuel cells which provide 400 kW of power, utilizing a non-combustive chemical process. Each Clean Energy Server is mounted onto a 25'6" x 4'3" precast concrete pad. As shown in the attached draft plan set, the placement of the Bloom Energy Servers and associated equipment is proposed to be installed at the rear of the building where existing mechanical equipment are currently located. In total the facility will be approximately 70 feet long, 4 feet wide and 7 feet tall.

The ES-5 equipment has been designed in compliance with Underwriters Laboratories (UL) in addition to various safety standards and requirements. There are no harmful off-gases or byproducts that will be produced by this equipment.

Please note that the energy server is monitored 24 hours a day, 7 days a week by Bloom Energy's communications network in Sunnyvale, CA. In the unlikely event the system will require attention, the system can be remotely shut off by Bloom. Additionally, the equipment will have several means to shut down the energy server locally.

We are submitting to the Connecticut Siting Council in the near future and want to give you an opportunity to review the proposed site plans. We would be happy to discuss any comments you may have either by phone or in person. If you have any questions or need further information, please feel free to call at (860) 839-8373.

Best Regards,

Justin Adams

justin.adams@bloomenergy.com

10/11/2016

Via certified mail 125 East Street Norwalk, CT 06851

Attn:

Michael Wrinn, Acting Director - Planning and Zoning

RE:

Bloom Energy Clean Energy Server Installation Frontier - 2 Washington Street,

Norwalk, CT

Mr. Wrinn,

On behalf of Bloom Energy we would like to provide you with information pertaining to the proposed clean energy server installation project located at the Frontier Communications, 2 Washington Street.

This project proposes to install two (2) new ES-5 Bloom Energy Servers; a new class of distributed power generator which produces clean, reliable and affordable electricity at the customer site. Bloom Energy Server contains solid oxide fuel cells which provide 400 kW of power, utilizing a non-combustive chemical process. Each Clean Energy Server is mounted onto a 25'6" x 4'3" precast concrete pad. As shown in the attached draft plan set, the placement of the Bloom Energy Servers and associated equipment is proposed to be installed at the rear of the building where existing mechanical equipment are currently located. In total the facility will be approximately 70 feet long, 4 feet wide and 7 feet tall.

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We are submitting to the Connecticut Siting Council in the near future and want to give you an opportunity to review the proposed site plans. We would be happy to discuss any comments you may have either by phone or in person. If you have any questions or need further information, please feel free to call at (860) 839-8373.

Best Regards,

Justin Adams

justin.adams@bloomenergy.com